

Statement of the Case.

THE BARBED WIRE PATENT.¹

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR
THE NORTHERN DISTRICT OF IOWA.

No. 128. Argued December 16, 17, 1891. — Decided February 29, 1892.

The invention secured to Joseph F. Glidden by letters patent No. 157,124, dated November 24, 1874, for an improvement in wire fences, involved invention, and the patent therefor is valid.

Courts incline to sustain a patent to the man who takes the final step in the invention which turns failure into success.

When an unpatented device, the existence and use of which are proven only by oral testimony, is set up as a complete anticipation of a patent, the proof sustaining it must be clear, satisfactory and beyond a reasonable doubt.

THIS was a bill in equity for the infringement of letters patent No. 157,124, issued to Joseph F. Glidden, November 24, 1874, for an "Improvement in Wire Fences." In his specification the patentee stated that "this invention has relation to means for preventing cattle from breaking through wire fences; and it consists in combining, with the twisted fence-wires, a short transverse wire, coiled or bent at its central portion about one of the wire strands of the twist, with its free ends projecting in opposite directions, the other wire strand serving to bind the spur-wire firmly to its place, and in position, with its spur-ends perpendicular to the direction of the fence-wire, lateral movement, as well as vibration, being prevented. It also consists in the construction and novel arrangement, in connection with such a twisted fence-wire and its spur-wires, connected and arranged as above described, of a twisting key or head-piece passing through the fence-post, carrying the ends of the fence-wires, and serving, when the spurs

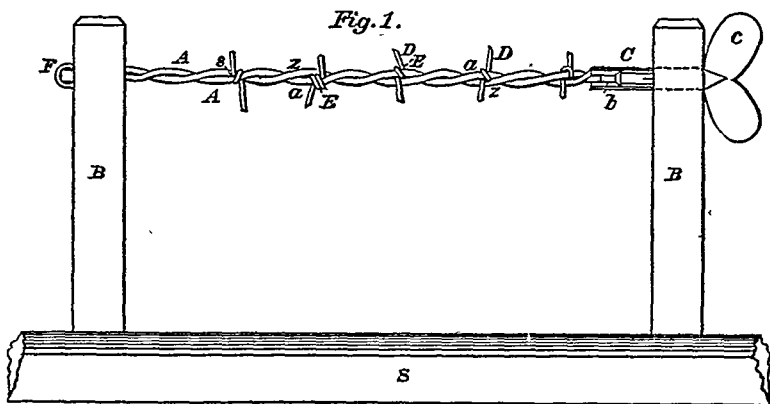
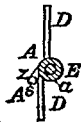
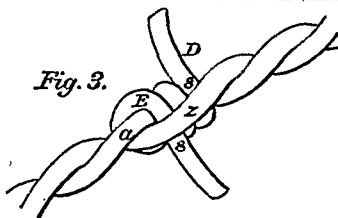
¹ Three appeals relating to this patent taken from decrees of the Circuit Court for the Northern District of Iowa, were consolidated and argued together, viz.: No. 128, *Washburn & Moen Manufacturing Company v. The Best 'em all Barbed Wire Company*; No. 129, *Same v. Norwood*; and No. 30, *Same v. Wiler*.

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become loose, to tighten the twist of the wires, and thus render them rigid and firm in position."

His claim was for "a twisted fence-wire having the transverse spur-wire D bent at its middle portion about one of the wire strands *a* of said fence-wire, and clamped in position and place by the other wire strand *z*, twisted upon its fellow, substantially as specified." The following drawings accompanied the specification:

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*Fig. 2.**Fig. 3.*

The bill also relied upon certain decrees obtained in other districts against other defendants, which were claimed to have established the validity of the patent. The answer denied that, in view of the state of the art at the time this patent was issued, there was any invention in the device described, and averred that the decrees set forth in the bill were collusively and fraudulently obtained; and also set forth an opinion of the Circuit Court of the United States for the Northern Dis-

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trict of Illinois to the effect that the patent was void for want of novelty. *Washburn & Moen Mfg. Co. v. Haish*, 10 Bissell, 65.

Mr. John R. Bennett for appellants.

Mr. A. H. Blair and *Mr. William H. Singleton* for appellees. *Mr. D. B. Henderson* filed a brief for same.

MR. JUSTICE BROWN delivered the opinion of the court.

No serious question is or can be made regarding the infringement in this suit, the defendants relying solely upon the want of novelty. To determine satisfactorily the question whether there is involved in this device sufficient of novelty to support a patent, it is necessary to consider somewhat at length the progress which had been made in constructing barbed wire fences prior to the issue of this patent, as it appears both from the face of the prior patents themselves and from the oral evidence introduced by the defendants tending to show an unpatented use of such device before the application was made in this case.

(1) The use of wire fences, composed either of a single wire, or of two or more wires twisted together, antedates by many years the barbed feature of such fences. But, either by reason of their comparative invisibility or their weakness, they proved an insufficient protection against cattle, and fell largely into disuse. Something was needed, not so much to strengthen them, as to deter cattle from encountering them or testing their strength. Natural hedges of thorn, which in effect contain the principle of the barbed wire, have been employed both in this country and in England from time immemorial. Fences of other materials and various forms had been armed with pickets, spurs, iron points, spikes, sharp stones, or bits of broken glass inserted in plaster, but prior to 1867 no one seems to have conceived the idea of arming wire fences with a similar protecting device. In July of that year, however, one William D. Hunt took out a patent for arming the wires with a series of small spur-wheels, their spurs being sharpened so as

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to prick readily. These wheels were provided with openings at their centres through which the wire passed, fitting it loosely so that the wheel would revolve easily upon it. There was a provision sometimes used and oftener not, for keeping the spurs in their places, and at suitable distances apart, by means of flanges. This was obviously a crude and unsatisfactory device, and never seems to have gone into general use. The spurs were small serrated wheels revolving loosely about a wire, aided by flat bits of metal to render them more readily visible, and kept in place, if at all, by a clumsy and expensive flange.

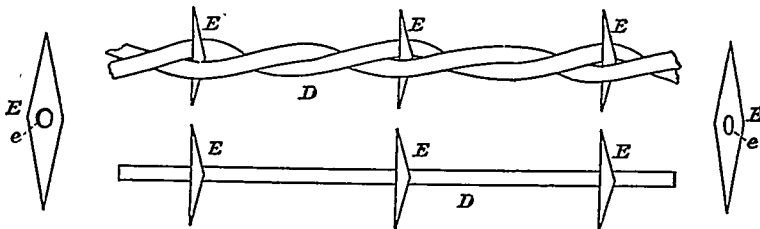
In the same year, and about four weeks before the patent to Hunt, although his actual invention was antedated by Hunt in point of time, Lucien B. Smith took out a patent for a wire fence, having spools of iron or wood strung upon it, each spool being perforated and provided with four spurs projecting radially from them, and so arranged that they would revolve, while they were held in place lengthwise of the wires by slight bends or deflections in the wires at a distance of two or three feet apart, forming short straight lengths of about four inches, upon which the spools were hung. This patent contained the first suggestion of a barb proper, though in a very imperfect form; but it embodied an idea of which the public was not slow to avail itself, and gave an impetus to succeeding inventors, which finally resulted in the barbed fence now in use. Though valuable as illustrating the state of the art, it will scarcely be claimed to be an anticipation of the Glidden device.

The patent of February 11, 1868, to Michael Kelly indicated a decided step in advance of its predecessors, consisting as it did of small flat pieces of iron or steel, cut from a plate by machinery, each provided with a hole corresponding with the size of the wire, though a little larger, so that they could be introduced easily upon the wire, either by proper machinery or by hand. "These pieces," says the patentee, "after being strung on the wire at distances about six inches apart, are compressed laterally upon the wire by a blow of a hammer, or otherwise, so as to flatten the hole *e*, and also correspondingly

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flatten the wire at the point where this adjunct is to stand. I term these pieces 'thorns;' and it will be observed that each presents two sharp points. They may be so placed that they will all stand in the same plane; or they may stand irregular in many different planes. I prefer the latter arrangement. The wire thus provided with the sharp points or thorns serves in the ordinary manner, with the addition of possessing an offensive character, which will soon teach cattle to respect it and not attempt to force it." Figure 2 of this patent, a representation of which is here given, undoubtedly contained the idea subsequently developed by Glidden, but there was apparently no method of holding the barb in place, save by a blow of a hammer—at least such seems to have been the opinion of the patentee at the time the patent was originally issued. He

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says of this in his specification: "I can, where it is desirable to increase the strength of the wire, lay another wire of the same or a different size alongside of a thorn-wire, and can twist the two together by any suitable mechanism." No claim was made for this method of construction in the original patent, although it seems to have been made the principal feature of a reissue obtained in 1876, which was not made an exhibit in this case. In this reissue he made a claim for twisting two wires and a series of thorns strung upon one of the wires and held in position by them. In the case of *Washburn & Moen Manufacturing Company v. Fuchs*, 16 Fed. Rep. 661, it was held that if this reissued patent were to be considered as covering more than the mode of fastening the plate barbs to the wire in the combination stated, *i.e.* by hammering, and as extending

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the use of the twisted wire so as to include its use for the distribution and locking of all kinds of barbs, the reissue was invalid as to such extension, because it was not included within the scope of the original invention. It is evident from this that the use of the second twisted wire for the purpose of locking the thorn was not contemplated by the patentee at the time his patent was originally granted, but was an afterthought suggested by other devices which in the meantime had made their appearance.

A second patent to Kelly, issued November 17, 1868, exhibits a flat wire pierced at intervals of six inches, through which thorns were inserted and locked to the wire by the blow of a hammer or otherwise. This device evidently bears a much more distant resemblance to the Glidden patent than the prior one, and is far from being an anticipation.

The application for the patent in suit was filed October 27, 1873, though the patent was not issued until November 24, 1874. Subsequent to the application for this patent, and on March 14, 1874, Glidden filed an application for an improvement in wire stretchers for fences, upon which a patent was issued May 12, 1874. It is not perceived how this patent could affect in any way the pending application for the later patent. The patentee abandoned nothing he had claimed before, but sought, as an improvement upon the former, to claim a slotted tube midway between the posts, in which was put a coil spring to spread the wires and automatically tighten them and keep them at the proper tension as against expansion by heat and contraction by cold. If the later application had covered the same invention as the prior application for the November patent, the later patent might have been void under our ruling in *Suffolk Company v. Hayden*, 3 Wall. 315; but his claim was for a combination of wires with the slotted tube, containing a coiled spring and perched upon a post. In this application he makes no mention whatever of barbs as a feature of his claim, although in describing his invention he mentions the use of two wires provided at suitable intervals with spurs coiled around them, and which are spread apart between the coils to keep the latter from moving longitudinally upon the wires. But he

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says of these spurs: "I do not claim to have originated the devices known as 'spurs' or 'prongs' on the wires, they having been used before, but confine myself to the means for holding the spurs at proper intervals on the wires and to the means for attaining a uniform tension of the wires, as claimed." This disclaimer, it will be observed, is of spurs or prongs generally—not of the coiled barb either alone or in combination with the twisted wires—and is made with reference to that application only. It is true that this patent was subsequently reissued with a broadly expanded claim for a combination with a fence-wire of a barb formed of a short piece of pointed wire, secured in place upon the fence wire by coiling between its ends, forming two projecting points; but this reissue was held to be unwarranted and void in *Washburn & Moen Manufacturing Company v. Fuchs*, 16 Fed. Rep. 661, 667. This attempted reissue, however, did not in any way affect his original application, which stood upon its own merits, and, after being rejected and amended three times, was finally passed, with a claim substantially identical with the first claim of the original application, and the patent granted. In legal effect this was a prior patent, since the date of the application and not the date of the patent controls in determining the legal effect to be given to two patents issued at different dates to the same inventor and the order in which they are to be considered. In any event, the reissue in 1876 of one patent would not affect another patent granted in 1874.

From this review of the state of the art at the time the patent in suit was issued it is evident that Glidden can neither claim broadly the use of the plain or the twisted wire, nor the sharp thorns or barbs, nor indeed the combination of the two as they appear in the Kelly patent. It does not follow, however, that he did not make a most valuable contribution to the art of wire fencing in the introduction of the coiled barb, in combination with the twisted wire, by which it is clamped and held in position. By this device the barb was prevented from turning or moving laterally and was held rigidly in place. If this be also true of the device shown in Figure 2 of the Kelly patent of February 11, 1868, the immobility of the barb in that

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patent is due to the aid of a blow struck by a hammer, since the mere fact that the barbs were strung upon the wires would not of itself prevent a movement within certain limits unless they were held fast by compression. Indeed, it is obvious, as the patentee says, that the effect of the second wire is simply to increase the strength of the wire, and not, as in the Glidden patent, to hold the barb rigidly in place, though, of course, it would prevent its movement to any considerable extent in either direction. All he says of it in this connection is that "it tends to insure a regularity in the distribution of the points in many different directions." The vital difference in the two patents is in the shape of the barb itself. In one case a flat bit of metal is used of an elongated diamond shape, through which a hole is pierced, by means of which it is strung upon the wire, requiring something more than the aid of a second wire twisted upon the first to render it immovable. In the other the barb is a piece of wire coiled about one of the fence wires, and held rigidly in place by the twisting of another wire about the first.

It is true that the affixing of barbs to a fence-wire does not apparently give a wide scope to the ingenuity of the inventor; but from the crude device of Hunt to the perfected wire of Glidden, each patent has marked a step in the progress in the art. The difference between the Kelly fence and the Glidden fence is not a radical one, but slight as it may seem to be, it was apparently this which made the barbed-wire fence a practical and commercial success. The inventions of Hunt and Smith appear to be scarcely more than tentative, and never to have gone into general use. The sales of the Kelly patent never seem to have exceeded 3000 tons per annum, while plaintiff's manufacture and sales of the Glidden device (substituting a sharp barb for a blunt one) rose rapidly from 50 tons in 1874 to 44,000 tons in 1886, while those of its licensees in 1887 reached the enormous amount of 173,000 tons. Indeed, one who has travelled upon the western plains of this continent cannot have failed to notice the very large amount of territory enclosed by these fences which otherwise, owing to the great scarcity of wood, would have to be left unprotected.

Under such circumstances courts have not been reluctant to

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sustain a patent to the man who has taken the final step which has turned a failure into a success. In the law of patents it is the last step that wins. It may be strange that, considering the important results obtained by Kelly in his patent, it did not occur to him to substitute a coiled wire in place of the diamond shape prong, but evidently it did not; and to the man to whom it did ought not to be denied the quality of inventor. There are many instances in the reported decisions of this court where a monopoly has been sustained in favor of the last of a series of inventors, all of whom were groping to attain a certain result, which only the last one of the number seemed able to grasp. Conspicuous among these is the case of *Loom Company v. Higgins*, 105 U. S. 580, 591, where an improvement in looms for weaving pile fabrics, consisting of such a new combination of known devices as to give to a loom the capacity of weaving fifty yards of carpet a day, when before it could only weave forty, was held to be patentable. It was said by the court, in answer to the argument that the combination was a mere aggregation of old and well-known devices, that "this argument would be sound if the combination claimed by Webster was an obvious one for attaining the advantages proposed—one which would occur to any mechanic skilled in the art. But it is plain from the evidence, and from the very fact that it was not sooner adopted and used, that it did not, for years, occur in this light to even the most skilful persons. It may have been under their very eyes, they may almost be said to have stumbled over it; but they certainly failed to see it, to estimate its value, and to bring it into notice. . . . Now that it has succeeded, it may seem very plain to any one that he could have done it as well. This is often the case with inventions of the greatest merit. It may be laid down as a general rule, though perhaps not an invariable one, that if a new combination and arrangement of known elements produce a new and beneficial result, never attained before, it is evidence of invention."

So in *Consolidated Valve Company v. Grosby Valve Company*, 113 U. S. 157, 179, it was said "that Richardson's invention brought to success what prior inventors had essayed and

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partly accomplished. He used some things which had been used before, but he added just that which was necessary to make the whole a practically valuable and economical apparatus. The fact that the known valves were not used, and the speedy and extensive adoption of Richardson's valve, are facts in harmony with the evidence that his valve contains just what the prior valves lack, and go to support the conclusion at which we have arrived on the question of novelty."

In *Smith v. Goodyear Dental Vulcanite Company*, 93 U. S. 486, 495, it was said by the court: "We do not say the single fact that a device has gone into general use, and has displaced other devices which had previously been employed for analogous uses, establishes in all cases that the later device involves a patentable invention. It may, however, always be considered; and, when the other facts in the case leave the question in doubt, it is sufficient to turn the scale." See also *Magowan v. New York Belting Co.*, 141 U. S. 332, 343.

(2) Thus far we have considered, as bearing upon the state of the art, devices, the character, construction and scope of which were exactly defined in the specifications and drawings of actual patents, the only question presented being the proper interpretation of such patents, and the bounds they had set to the ingenuity of succeeding inventors. We have now to deal with certain unpatented devices, claimed to be complete anticipations of this patent, the existence and use of which are proven only by oral testimony. In view of the unsatisfactory character of such testimony, arising from the forgetfulness of witnesses, their liability to mistakes, their proneness to recollect things as the party calling them would have them recollect them, aside from the temptation to actual perjury, courts have not only imposed upon defendants the burden of proving such devices, but have required that the proof shall be clear, satisfactory and beyond a reasonable doubt. Witnesses whose memories are prodded by the eagerness of interested parties to elicit testimony favorable to themselves are not usually to be depended upon for accurate information. The very fact, which courts as well as the public have not failed to recognize, that almost every important patent, from the

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cotton gin of Whitney to the one under consideration, has been attacked by the testimony of witnesses who imagined they had made similar discoveries long before the patentee had claimed to have invented his device, has tended to throw a certain amount of discredit upon all that class of evidence, and to demand that it be subjected to the closest scrutiny. Indeed, the frequency with which testimony is tortured, or fabricated outright, to build up the defence of a prior use of the thing patented, goes far to justify the popular impression that the inventor may be treated as the lawful prey of the infringer. The doctrine was laid down by this court in *Coffin v. Ogden*, 18 Wall. 120, 124, that "the burden of proof rests upon him," the defendant, "and every reasonable doubt should be resolved against him. If the thing were embryotic or inchoate; if it rested in speculation or experiment; if the process pursued for its development had failed to reach the point of consummation, it cannot avail to defeat a patent founded upon a discovery or invention which was completed, while in the other case there was only progress, however near that progress may have approximated to the end in view." This case was subsequently cited with approval in *Cantrell v. Wallick*, 117 U. S. 689, 696, and its principle has been repeatedly acted upon in the different circuits. *Hitchcock v. Tremaine*, 9 Blatchford, 550; *Parham v. American Button-Hole Machine Co.*, 4 Fisher, 468; *American Bell Telephone Co. v. Peoples' Telephone Co.*, 22 Fed. Rep. 309.

The testimony of the defendant tended to show the existence, public exhibition and use of a number of fences prior to the date of the application in this case; but what is known as the Morley fence is supported by the largest amount of evidence, and was the one the learned District Judge who heard this case in the court below held to have been an anticipation of this patent. (33 Fed. Rep. 261.)

A panel of this fence appears to have been exhibited at a county fair in Delaware County, Iowa, at Delhi, in 1858 and 1859. It appears that Morley owned lands in Delaware County; that his family lived in Pennsylvania; that for a number of years, from 1858 to 1864, he spent a portion of his

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time in Iowa, living alone or boarding with his neighbors; that he was not of entirely sound mind; and that he died in an insane asylum in Pennsylvania in 1867, after a year's immurement. It also appears that after 1861 the county fairs of Delaware County were held in Manchester, so that whatever was exhibited by Morley at Delhi preceded by several years the application for the Glidden patent. The testimony of the defendants tended to show, and we are indebted to the court below for an abstract of it, that, at the time the fair was being held at Delhi in 1858 and 1859, Morley came to the house of one Dubois, a farmer living in Delaware County, having with him a piece of fence-wire, which had short pieces of wire wound around it; that Morley remained with him that night; that the next day he saw a panel of fence on the fair ground exhibited by Morley, made by stretching wires from a tree or post to another post; and that the wire so used was the same or similar to that previously shown him by Morley. One Bates, a blacksmith, swore that he aided Morley in putting up the panel of fence exhibited by him. He described the way the barbs were coiled around the fence-wire, testifying that he made the tools with which the short wires were twisted around the fence-wire, and describing the tools; and also that he afterwards made a pair of shears for Morley to be used in cutting the wire into pieces suitable for barbs. One Robinson, who acted as deputy marshal at the fair, testified that he rode a gray horse, and, having occasion to leave him, hitched him to a fence-post in the fair grounds, and on his return found his nose and breast bloody, caused by a cut on his lip, and on examination found that the wires attached to the post had swags or barbs thereon, formed by coiling a short piece of wire around the fence-wire. He also testified that in 1857 he was engaged in work on the railroad through Delaware County, near which Morley had a piece of land; that Morley was frequently where witness was working and tried to sell the land to him for a pair of mules; and that he had with him a piece of wire with swags on it, which he exhibited to witness, saying he was going to get it patented. There was other testimony to the effect that a boy, in playing

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with other boys on the fair grounds, was thrown against the panel of fence and received two cuts, caused by the wires twisted upon the wire fence, which bled freely, and the scars of which were still visible upon his face. One Potter testified that he attended the fair and saw Morley there; that he exhibited a panel of fence made of wires strung between a tree and a post, with barbs made of short wires twisted around the plain wire; that Morley gave him a piece of the wire with barbs on it; that he took it home with him; that he and his wife talked about it and its effect upon stock; that he had the specimen of the wire in his summer kitchen for a year or more, and then put it in an old trunk in which he kept various relics and keepsakes; that it had remained there, and was there still; and then, on request of defendants' counsel, witness went to his home, brought the specimen of wire before the notary, and made it an exhibit in the case. It consists of a short piece of plain fence-wire with two barbs on it, made by twisting other pieces of wire transversely around the fence-wire. One Harrington also testified that he attended the fair; that he saw the panel of fence made of wire situated between a small tree and post, and there were barbs on it made of short wires twisted around the fence-wire; that his attention was attracted to it by efforts that were made to drive a bull upon it; and that he examined the wire and noticed its construction.

In all some twenty-four witnesses were sworn on behalf of the defendants to the existence of the Delhi fair fence. According to the recollection of some of the witnesses it was made of three or four strands of single wire, on which the barbs were fastened, the wires being attached at their ends to posts in the ground, or to a post and a tree; and that the top wire had barbs on it formed of short pieces of wire wrapped around it, some say once, others twice, and still others three times. The other two or three strands of single wire were without barbs. Beneath the top barbed wire was a board to attract the attention of the cattle, either secured to the posts or suspended by a wire from the top wire strand. This fence was put up on the second day of the fair and

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exhibited one day, as it appears the fair continued but two days. No one seems to know what became of the panel, nor of the barbed wire upon it; it was never seen after the fair, beyond the single piece produced by the witness Potter.

Other witnesses sworn by the plaintiff, including the officers of the fair association and the editor of the local newspaper, were present at the fair, but have no recollection of anything of the kind. This, however, is purely negative testimony, and of no great value.

It further appeared that in 1866 Morley took out a patent for a triangular cattle pen, built of posts and boards supported upon wheels, so constructed that it could be moved by the animal inside of it. Some seven or eight witnesses testified that at different times when they saw this machine it had on it one or more strands of fence-wire with barbs or pricklers on them, put on in the same manner as were the barbs on the Delhi fair exhibit, and the whole strung on the top of the posts above the boards.

Other witnesses testified to seeing fences upon farms owned or occupied by Morley, and in a yard near his mill, over which strands of barbed wire were stretched in the same manner as in the Delhi fence.

Upon the other hand, plaintiff met this testimony with that of a large number of witnesses who had seen these fences and also the cattle pen, and who testified that there was no barbed wire connected with them. The members of Morley's family, including his widow and sons, were also sworn and testified to the effect that he had never said anything about barbed wire or barbed wire fences, although it is but just to say that they remained in Pennsylvania and had never resided in Iowa. One of his sons testified that he visited Iowa once, in 1858, 1859, or 1860; and that he was at his father's mill for some time and saw no barbed wire about it, nor did he hear his father say anything about it. It is useless to go further into the detail of this testimony.

Even conceding that Morley did exhibit a wire fence armed with barbs at the Delhi County fair, we do not think the testimony connected with this fence makes out a case of prior

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use of the device patented by Glidden, for the following reasons: First, while the fence may have been armed with barbs, there is very little, if anything, to show that it was constructed according to the design of the Glidden fence. Indeed, after the lapse of twenty-five years it would, in the nature of things, be highly improbable that any witness who saw this fence for the single day it was exhibited there would be able to describe it accurately. Second, if Morley had regarded this fence as of any value he would have applied for a patent upon it, since he did in fact obtain a patent for his travelling pen, which appears to have been a comparatively worthless contrivance. If this pen had been armed with a barbed wire it is somewhat singular that no allusion was made to it in the drawings or specification. Third, the testimony of Potter, that he preserved a piece of wire given to him by Morley in a trunk containing some old relics for over twenty-five years, is not only contradicted by his son, who was familiar with the trunk, had examined its contents, and testified that he had never seen the wire there, but is improbable upon its face. Fourth, if any experiments were made by Morley in this direction they were evidently looked upon by him and by the public as of no practical value, and were subsequently abandoned and the fences lost.

While we think the testimony goes far to establish the fact that Morley exhibited a wire fence at this fair, and perhaps also used it upon his farm at about the date claimed, we are far from being satisfied that it was the Glidden device, or so near an approximation to it as to justify us in holding that it was an anticipation.

Defendants also introduced testimony tending to show that one Long, a farmer of Delaware County, Iowa, made some barbed wire fence in the spring and summer of 1873. He put the barbs upon smooth wire; made them out of staples, with two irons having holes in the ends of each, running down into the irons from the ends longitudinally, of a little larger size than the staples to be used, and of the depth of the prongs of the staples. Two pieces of this barbed wire are produced as exhibits. It was not denied by the plaintiff that Long built

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a fence as claimed by him, and barbed his wire as described, but his evidence tended strongly to show that this occurred more than a year after the date fixed by him, *i.e.* in 1874 or 1875, and after application had been made for the Glidden patent.

The most cogent evidence is that of the parties of whom Long appears to have purchased the lumber to build this fence, who swore that it was shipped in January, 1875, a statement which was verified by the book-keeper in the employ of the Illinois Central Railroad, who showed the first shipment of lumber to Long to have been in January, 1875.

The existence of barbs upon what is known as the Chester D. Stone fence in 1872 is sworn to by a large number of witnesses, and denied by an equal number who were acquainted with the facts, and testified that it was an ordinary wire fence. Stone said it was made by using fence staples for barbs, putting them on by putting a staple astride of the wire, and hammering them on an iron wedge until the points passed one another, then placing the edge of the wedge between the points and driving on the head of the staple until the points of the staple were spread. The points stood out from the wire at right angles. Of all the testimony bearing upon this fence, and of the others, with a single exception, it is sufficient to observe that it is limited to a staple twisted around a single wire to form a barb, and that it totally fails to indicate the combination of the twisted wires and coiled barb of the Glidden patent. The testimony with reference to the existence of this fence was subjected to a careful examination by Mr. Justice Brewer in the case against the *Grinnell Wire Company*, 24 Fed. Rep. 23, 29, who reached the conclusion that it was unworthy of belief. Upon the perusal of this testimony we are satisfied that his conclusion was correct.

The testimony with reference to the Hutchinson fence tends to show the existence of a barbed wire fence on a farm near Manchester as nearly as 1868 or 1869. The depositions of four members of the same family were taken, one of whom did the work in putting the barbs upon the fence. He swears "it was a fence with posts and wires strung along on them,

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like the old plain wire fence used to be. The barbs were a piece of wire, as I remember them now, like a staple, sharp at each end. We put them on with a pair of pincers, larger and heavier but similar to those used in ringing hogs." The staples, it seems, were purchased in Manchester, and the witness found it impossible to set them hard enough upon the smooth wire to prevent their turning. A piece of this barbed wire was an exhibit in the case, and shows a single wire with a pointed barb, also of wire, wound once around it. Indeed, all the testimony indicates that the barbs were placed upon a single wire, and that no attempt was made to hold them in place by twisting a second wire about it. The conclusive answer to this testimony, however, is that both the barbs and pincers were purchased of one Butler, a merchant of Manchester, and it is proven by him and his clerks that he had none of this size for sale until 1877, and that none could be bought at any hardware store in Manchester.

Some six witnesses were called by the defendant to establish the existence of a barbed wire on a fence between 1857 and 1860 upon the farm of one Beers, near De Kalb, in Illinois. The testimony showed it to be a single wire with barbs on it, forming part of a fence around a hay stack. The barb was first twisted around, and then extended along the wire possibly one-half inch to an inch, and then twisted again in the same way. Another wire forming part of a fence upon the same farm seems to have been composed of two wires, the barb being fastened to one of them. Another witness describes the fence as "two wires twisted around, and there was another piece of wire, I should judge about six inches in length, twisted around this wire, and one end projected one way and the other end the other." It appears that the prior use of this wire was set up in a case by these same plaintiffs against one Haish in the Circuit Court for the Northern District of Illinois, 10 Bissell, 65, and was held to have been insufficiently proved. A specimen of the twisted wire produced in that suit was also put in evidence in this. It is very improbable that it could have been invented by a boy in his early teens, such as Beers then was, and it is shown that he subse

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quently took out a license under the Glidden patent after being defeated in a suit brought against Haish for the infringement of this patent, in which his device was set up as an anticipation. The testimony also indicates that the exhibit is constructed of a variety of steel which did not come into use until after 1870. Upon the whole, the evidence fails to satisfy us that this fence was constructed before application was made for the Glidden patent.

There was a vast amount of testimony of similar character tending to show the use of coiled barbs upon fence-wires, which it would serve no good purpose to discuss in detail. There was evidently prior to Glidden's application more or less experimenting in a rude way in and about Delaware County, upon the subject of barbed wires as applied to wire fences, and we think it is quite probable that coiled barbs were affixed to single wires before the Glidden application was made. We are not satisfied, however, that he was not the originator of the combination claimed by him of the coiled barb, locked and held in place by the intertwisted wire. It is possible that we are mistaken in this; that some one of these experimenters may have, in a crude way, hit upon the exact device patented by Glidden, although we are not satisfied from this testimony, whether or by whom it was done. It is quite evident, too, that all or nearly all of these experiments were subsequently abandoned. But it was Glidden, beyond question, who first published this device; put it upon record; made use of it for a practical purpose; and gave it to the public, by which it was eagerly seized upon, and spread until there is scarcely a cattle-raising district in the world in which it is not extensively employed. Under these circumstances, we think the doubts we entertain concerning the actual inventor of this device should be resolved in favor of the patentee.

The decree of the Circuit Court will, therefore, be

Reversed, and the case remanded with instructions to enter a decree for the plaintiff for an accounting, and for further proceedings in conformity with this opinion.

MR. JUSTICE FIELD dissented, upon the ground that there was no novelty in the invention.

Syllabus.

NO. 129. THE WASHBURN AND MOEN MANUFACTURING COMPANY v. NORWOOD. NO. 130. THE WASHBURN AND MOEN MANUFACTURING COMPANY v. WILER. MR. JUSTICE BROWN delivered the opinion of the court. These cases were consolidated in the court below with that of *Washburn and Moen Manufacturing Company v. Beat 'Em All Barbed Wire Company*, No. 128, with a stipulation that the same decree upon the question of the validity and infringement of the patent declared upon should be entered in all the causes. They differ only in the fact that in the first case the suit was against the manufacturers, and in these cases against the vendors of the infringing wire. As the cases are identical in every other particular the same disposition will be made of them, and the decrees of the court below reversed, and the cases remanded with instructions to enter in each a decree for the plaintiff, for an accounting, and for further proceedings in conformity with the opinion in No. 128.

Mr. John R. Bennett for appellants.

Mr. A. H. Blair and *Mr. William H. Singleton* for appellees.

MICHIGAN INSURANCE BANK v. ELDRED.

ERROR TO THE CIRCUIT COURT OF THE UNITED STATES FOR THE
EASTERN DISTRICT OF WISCONSIN.

No. 1283. Argued January 29, 1892. — Decided February 29, 1892.

After the term at which a trial took place has expired, without the court's control over the case being reserved by standing rule or special order, and especially after a writ of error has been entered in this court, the court below cannot allow a bill of exceptions then first presented, or amend a bill of exceptions already allowed and filed.

Under the Code of Wisconsin, an express denial, upon information and belief, that the plaintiff was, at or since the commencement of the action, or is now, a corporation, puts in issue the existence of the corporation.

The conversion of a state bank into a national bank, with a change of name, under the National Banking Act, does not affect its identity, or its right to sue upon liabilities incurred to it by its former name.